

WHAT IS CLAIMED IS:

1 1. A method for estimation of component gating risk in manufacturing
2 operations comprising:
3 generating an altered component plan by altering a component plan for a
4 component;
5 computing a mean production value using said altered component plan; and
6 computing said component gating risk using said mean production value.

1 2. A method for estimation of component gating risk in manufacturing
2 operations comprising:
3 generating an increased component plan by increasing a component plan for a
4 component;
5 computing a first mean production value using said increased component plan;
6 generating a decreased component plan by decreasing said component plan for
7 said component;
8 computing a second mean production value using said decreased component
9 plan; and
10 computing said component gating risk using said first and said second mean
11 production values.

1 3. A method for estimation of component shortage risk in manufacturing
2 operations comprising:
3 identifying a component; and
4 computing r , wherein
5 r is said component shortage risk,
6
$$r = \int_d^{\infty} N(x, a \bullet \mu, \sqrt{a^T \Sigma a}) dx,$$

7 d is a maximum expeditable level of said component,
8 $N(x, \mu, \sigma)$ is a normal density function having a mean equal to μ and a
9 variance equal to σ ,
10 a is a vector of connect rates for said component,

- 11 μ is a mean demand, and
12 Σ represents demand covariance.